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Introduction to Electronic Commerce and E-Business

This module introduces you to the concepts of e-commerce and e-business

One of the major buzz words of the last decade of the 20th century was “e-commerce”. With the rise of mega online stores like Amazon.com, online auctions such as ebay, credit cards, plastic money and payment gateways such as paypal the consumerism of the masses was taken to a whole different playing field. For the first time in history, people could buy stuff from the comfort of their homes or while having lunch in their work places. According to Turban et al. (201)

“Electronic commerce (EC) is the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, mostly the Internet and intranets”

This roughly means that e-commerce concentrates on getting the orders and the payments from the customers into a business. All other operations were conducted as usual in the old fashioned way. You can get a better understanding about e-commerce from <http://en.wikipedia.org/wiki/E-commerce>.

However, the 21st century and the rapid advancements in technology have given rise to a completely new paradigm which is known as e-business. Wikipedia defines it as:

“...the application of information and communication technologies (ICT) in support of all the activities of business.” (Electronic business)

With the rise of e-business, a complete business comprising of all the intricate operations can be taken online which results in the rise of virtual companies with virtual employees contributing from every corner of the globe. E-business has made geography insignificant when it comes to competing in the global market. To get a better understanding of e-business see http://en.wikipedia.org/wiki/Electronic_business

References

Electronic business. (n.d.). Retrieved 01 06, 2011, from Wikipedia:
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Turban, E., King, D., Lee, J., Liang, T. P., & Turban, D. (2010). *Electronic Commerce 2010 A Managerial Perspective*. New Jersey: Prentice Hall.

Categories of electronic commerce

This module discusses the various categories of electronic commerce based on the transactions and the relationships between the key stakeholders.

Electronic commerce can be categorised into different types by identifying the transactions and the relationships between the key stakeholders.

According to Turban et al. (2010), the most common categories are as follows:

Business-to-business (B2B)

In this category, all the stakeholders (i.e. the buyers and the sellers) are businesses or organisations. One example for this type would be companies such as [SAP](#) and [Oracle](#) selling enterprise resource planning (ERP) software applications to manufacturing companies.

Business-to-Consumer (B2C)

This category involves businesses or organisations selling products and services to the end consumer (i.e. businesses and organisations selling goods and services to the general public). Buying a book from Amazon.com can be categorised as B2C.

Business-to-Business-to-Consumer (B2B2C)

A more recent categorisation is B2B2C where companies or organisations sell products and services to other companies and organisations; who in turn provides the product or service to its client base or staff. An example for this scenario would be a marketing company buying [BlackBerry](#) smart phones from a telecoms service provider to give to the marketing staff or “road warriors” who are on the road promoting products.

Consumer-to-Business (C2B)

With technology and access to technology becoming cheaper, end consumers who are the general public can now sell products and services to businesses. A housewife who sells cake recipes online to bakeries and a

web developer selling his web design skills to a used-car dealership to setup an online catalogue are a couple of examples for C2B electronic commerce.

Intrabusiness EC

This category relates to transactions taking place within an organisation where products and services are sold or exchanged between departments and employees. The professional education center of a University providing training on statistical analysis to the staff can be considered as an example for this category.

Business-to-Employees (B2E)

This category can be considered as a subset of B2B2C and Intrabusiness EC. Both the examples of the company providing smart phones to road warriors and the professional education center providing training for University staff fall under this category.

Consumer-to-Consumer (C2C)

C2C has become a major part of electronic commerce in the recent years due to platforms such as [ebay](#) and [PayPal](#) which empowers the general public to buy and sell products directly from other individuals. Buying a used mobile phone on ebay is a good example of C2C electronic commerce.

References

Turban, E., King, D., Lee, J., Liang, T. P., & Turban, D. (2010). *Electronic Commerce 2010 A Managerial Perspective*. New Jersey: Prentice Hall.

Electronic money

This module discusses several online payment methods used for e-commerce transactions.

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When commerce goes electronic, the means of paying for goods and services must also go electronic. Paperbased payment systems cannot support the speed, security, privacy, and internationalization necessary for electronic commerce. In this section, we discuss four methods of electronic payment:

- electronic funds transfer
- digital cash
- ecash
- credit card

There are four fundamental concerns regarding electronic money: security , authentication, anonymity, and divisibility. Consumers and organizations need to be assured that their on-line orders are protected, and organizations must be able to transfer securely many millions of dollars. Buyers and sellers must be able to verify that the electronic money they receive is real; consumers must have faith in electronic currency. Transactions, when required, should remain confidential. Electronic currency must be spendable in small amounts (e.g., less than one tenth of a cent) so that high-volume, small-value Internet transactions are feasible (e.g., paying 0.1 cent to read an article in an encyclopedia). The various approaches to electronic money vary in their capability to solve these concerns (see Table 1).

	Security	Authentication	Anonymity	Divisibility
EFT	High	High	Low	Yes
Digital cash	Medium	High	High	Yes

Ecash	High	High	High	Yes
Credit card	High	High	Low	Yes

Characteristics of electronic money

Any money system, real or electronic, must have a reasonable level of security and a high level of authentication, otherwise people will not use it. All electronic money systems are potentially divisible. There is a need, however, to adapt some systems so that transactions can be automated. For example, you do not want to have to type your full credit card details each time you spend one-tenth of a cent. A modified credit card system, which automatically sends previously stored details from your personal computer, could be used for small transactions.

The technical problems of electronic money have not been completely solved, but many people are working on their solution because electronic money promises efficiencies that will reduce the costs of transactions between buyers and sellers. It will also enable access to the global marketplace. In the next few years, electronic currency will displace notes and coins for many transactions.

Electronic Payment Methods

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Electronic funds transfer

Electronic funds transfer (EFT), introduced in the late 1960s, uses the existing banking structure to support a wide variety of payments. For example, consumers can establish monthly checking account deductions for utility bills, and banks can transfer millions of dollars. EFT is essentially electronic checking. Instead of writing a check and mailing it, the buyer initiates an electronic checking transaction (e.g., using a debit card at a point-of-sale terminal). The transaction is then electronically transmitted to an intermediary (usually the banking system), which transfers the funds from the buyer's account to the seller's account. A banking system has one or more common clearinghouses that facilitate the flow of funds between accounts in different banks.

Electronic checking is fast; transactions are instantaneous. Paper handling costs are substantially reduced. Bad checks are no longer a problem because the seller's account balance is verified at the moment of the transaction. EFT is flexible; it can handle high volumes of consumer and commercial transactions, both locally and internationally. The international payment clearing system, consisting of more than 100 financial institutions, handles more than one trillion dollars per day.

The major shortfall of EFT is that all transactions must pass through the banking system, which is legally required to record every transaction. This lack of privacy can have serious consequences where as cash gives anonymity.

Digital cash

Digital cash is an electronic parallel of notes and coins. Two variants of digital cash are presently available: prepaid cards and smart cards. The phonecard, the most common form of prepaid card, was first issued in 1976 by the forerunner of Telecom Italia. The problem with special-purpose cards, such as phone and photocopy cards, is that people end up with a purse or wallet full of cards. A smart card combines many functions into one card. A smart card can serve as personal identification, credit card, ATM card, telephone credit card, critical medical information record and as cash for small transactions. A smart card, containing memory and a microprocessor, can store as much as 100 times more data than a magnetic-stripe card. The microprocessor can be programmed.

The stored-value card, the most common application of smart card technology, can be used to purchase a wide variety of items (e.g., fast food, parking, public transport tickets). Consumers buy cards of standard denominations (e.g., USD 50 or USD 100) from a card dispenser or bank. When the card is used to pay for an item, it must be inserted in a reader. Then, the amount of the transaction is transferred to the reader, and the value of the card is reduced by the transaction amount.

The problem with digital cash, like real cash, is that you can lose it or it can be stolen. It is not as secure as the other alternatives, but most people are likely to carry only small amounts of digital cash and thus

security is not so critical. As smart cards are likely to have a unique serial number, consumers can limit their loss by reporting a stolen or misplaced smart card to invalidate its use. Adding a PIN number to a smart card can raise its security level.

Twenty million smart cards are already in use in France, where they were introduced a decade earlier. In Austria, 2.5 million consumers carry a card that has an ATM magnetic stripe as well as a smart card chip. Stored-value cards are likely to be in widespread use in the United States within five years. Their wide-scale adoption could provide substantial benefits. Counting, moving, storing and safeguarding cash is estimated to be 4 percent of the value of all transactions. There are also significant benefits to be gained because banks don't have to hold as much cash on hand, and thus have more money available for investment.

Ecash

Digicash of Amsterdam has developed an electronic payment system called ecash that can be used to withdraw and deposit electronic cash over the Internet. The system is designed to provide secure payment between computers using e-mail or the Internet. Ecash can be used for everyday Internet transactions, such as buying software, receiving money from parents, or paying for a pizza to be delivered. At the same time, ecash provides the privacy of cash because the payer can remain anonymous.

To use ecash, you need a digital bank account and ecash client software. The client is used to withdraw ecash from your bank account, and store it on your personal computer. You can then spend the money at any location accepting ecash or send money to someone who has an ecash account.

The security system is based on public-key cryptography and passwords. You need a password to access your account and electronic transactions are encrypted.

Credit card

Credit cards are a safe, secure, and widely used remote payment system. Millions of people use them every day for ordering goods by phone. Furthermore, people think nothing of handing over their card to a restaurant server, who could easily find time to write down the card's details. In the case of fraud in the U.S., banks already protect consumers, who are typically liable for only the first USD 50. So, why worry about sending your credit card number over the Internet? The development of secure servers and clients has made transmitting credit card numbers extremely safe. The major shortcoming of credit cards is that they do not support person-to-person transfers and do not have the privacy of cash.